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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,846	01/28/2002	Joseph L. Dallas	CVI-0004	3708
23413	7590	11/18/2003	EXAMINER ZARROLI, MICHAEL C	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			ART UNIT 2839	
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DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,846

Examiner

Michael C. Zarroli

Applicant(s)

DALLAS ET AL.

Art Unit

2839

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15-28 and 30-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-18, 20-28, 30-33 and 35-71 is/are rejected.
- 7) ☒ Claim(s) 19 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 August 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Drawings

1. All previous objections have been overcome.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the via holes in the front and rear face of the substrate (the examiner assumes these are different from the upper and lower) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. Objections have been overcome.

Claim Objections

4. Objections have been overcome.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.
6. The indicated allowability of claims 36-42 is withdrawn in view of the newly discovered reference(s) to Ohtsuka et al (US 6062740). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

7. All previous rejections have been overcome.
8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country, in public use, or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 6-13, 21-24, 26-28 rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al.

Sakai discloses a method for fabricating a fiber array (title) comprising, providing a substrate (110) having a plurality of guides (e.g. 121, 122) each penetrating through the substrate (fig. 2). The substrate having one or more via holes in fluid communication with the plurality of guides wherein the one or more via holes

(140) is in fluid communication with a channel having fluid communication with the plurality of guides (figures 2 or 18). Sakai discloses disposing a plurality of optical fibers (e.g. 410, 420, 710 or 790) within the respective guides, each of the optical fibers being placed with a corresponding one of the guides (figures 18 or 25). Finally, Sakai discloses injecting an adhesive (790) into the one or more via holes, the adhesive fixing the optical fibers in the respective guides of the substrate (figures 26-28).

Regarding claims 2-4 and 22-24 Sakai discloses that each guide is in communication with a corresponding via hole and that, each via hole is offset from the plurality of guides (figures 1-2). In addition, the one or more via holes are disposed on one side of the substrate (fig. 2).

Regarding claims 6 and 26 Sakai discloses that each guide of the plurality of guides is a through-hole (figures 30-31).

Regarding claims 7-8 and, 27-28 Sakai discloses that the substrate comprises a lower substrate having the plurality of guides and an upper substrate (fig. 9) with corresponding guides.

Regarding claims 9-13 Sakai discloses that the method further comprises: adjusting positions of each optical fiber to be aligned in accordance with a predetermined optical alignment (figures 30-33) before injecting the adhesive. The predetermined

optical alignment is determined by the configuration of the guides formed in the substrate (figures 35-37). The guides' formed in the substrate are configured in a V-groove shape on a lower portion thereof and an upper portion (figures 2-23). Finally, Sakai discloses that the substrate includes a lower and an upper substrate, wherein at least one of the lower and upper substrates includes the guides configured to align the optical fibers in the predetermined optical alignment (figures 16-18).

10. Claims 1, 5, 20-21, 25, and 35 rejected under 35 U.S.C. 102(b) as being anticipated by Shiota et al.

Shiota discloses a method for fabricating a fiber array (title) comprising, providing a substrate (figures 7 & 8) having a plurality of guides (724) each penetrating through the substrate. The substrate having one or more via holes (at 721) in fluid communication with the plurality of guides wherein the one or more via holes is in fluid communication with a channel having fluid communication with the plurality of guides (fig. 15). Shiota discloses disposing a plurality of optical fibers (801) within the respective guides, each of the optical fibers being placed with a corresponding one of the guides (fig. 16). Finally, Shiota discloses injecting an adhesive (810) into the one or more via holes, the adhesive fixing the optical fibers in the respective guides of the substrate (fig. 18).

Regarding claims 5, 20, 25 and, 35 Shiota discloses that the via holes are disposed on two sides, front and rear, of the substrate (fig. 18).

Claim Rejections - 35 USC § 103

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 15-18 and, 30-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al as applied to claims 1 and 21 respectively above, and further in view of case law.

Sakai discloses the claimed invention except for the materials recited in claims 15-18 and, 30-33. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the adhesives recited in these claims, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. The motivation/suggestion for doing so would have been to permit the array to be used in a wide range of environments.

14. Claims 36 and, 42 rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuka et al (US 6062740) in view of Shiota et al (US 5602951).

Ohtsuka discloses a method for fabricating a fiber array (title) comprising: providing a substrate (1) having a plurality of guides (13) formed therein each guide of the plurality of guides penetrating through the substrate (fig. 1). A plurality of optical fibers (52) is disposed with respective guides, each optical fiber being placed in correspondence with a respective guide (fig. 11). Ohtsuka discloses that the substrate has one or more via holes (e.g. fig. 14) in fluid communication with the plurality of guides and, injecting an adhesive (41) into the

one or more via holes. Finally, inserting a mechanical plunger (31) into one or more via holes to force the adhesive through the holes and through out the fiber array (figures 3 & 4).

Ohtsuka does not disclose that the substrate comprises first and second substrates.

Shiota discloses a substrate comprised of first (1) and second (2) substrates.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to make the substrate of Ohtsuka from first and second substrates as taught by Shiota. The motivation/suggestion for doing so would have been a better view of the fibers while they are aligned.

Regarding claim 42 Ohtsuka does not disclose that the one or more via holes are disposed on two sides of the substrate. Shiota discloses via holes on two sides of the substrate (figures 15-18). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to put via holes on two sides of the substrate of Ohtsuka as taught by Shiota. The motivation/suggestion for doing so would have been easier access for injecting adhesive.

15. Claims 37-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuka in view of Shiota as applied to claim 36 above, and further in view of case law.

Ohtsuka in view of Shiota discloses the claimed invention except for the materials recited in claims 37-41. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the adhesives recited in these claims, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

The motivation/suggestion for doing so would have been to permit the array to be used in a wide range of environments.

16. Claims 43-46, 48-55, 60-63, 65-67 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al in view of Dudoff et al.

Sakai discloses a method for fabricating a fiber array (title) comprising, providing a substrate (110) having a plurality of guides (e.g. 121, 122) each penetrating through the substrate (fig. 2). The substrate having one or more via holes in fluid communication with the plurality of guides (figures 2 or 18). Sakai discloses disposing a plurality of optical fibers (e.g. 410, 420, 710 or 790) within the respective guides, each of the optical fibers being placed with a corresponding one of the guides (figures 18 or 25). Finally, Sakai discloses injecting an adhesive (790) into the one or more via holes, the adhesive fixing the optical fibers in the respective guides of the substrate (figures 26-28).

Sakai does not disclose that the adhesive comprises a solder or that the via hole is coated with a metal coating.

Dudoff discloses adhesive comprised of solder (paragraph 0110) and via holes coated with metal (paragraph 0186).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the array of Sakai by using an adhesive with solder and to coat the via holes with metal as taught by Dudoff. The motivation/suggestion for doing so would have been that using metal coating allows sub-micron tolerances (Dudoff paragraph 0035).

Regarding claims 44-46 and, 61-63 Sakai discloses that each guide is in communication with a corresponding via hole and that, each via hole is offset from the plurality of guides (figures 1-2). In addition, the one or more via holes are disposed on one side of the substrate (fig. 2).

Regarding claim 48 and, 65 Sakai discloses that each guide of the plurality of guides is a through-hole (figures 30-31).

Regarding claims 49-50 and, 66-67 Sakai discloses that the substrate comprises a lower substrate having the plurality of guides and an upper substrate (fig. 9) with corresponding guides.

Regarding claims 51-55 Sakai discloses that the method further comprises: adjusting positions of each optical fiber to be aligned in accordance with a predetermined optical alignment (figures 30-33) before injecting the adhesive. The

predetermined optical alignment is determined by the configuration of the guides formed in the substrate (figures 35-37). The guides' formed in the substrate are configured in a V-groove shape on a lower portion thereof and an upper portion (figures 2-23). Finally, Sakai discloses that the substrate includes a lower and an upper substrate, wherein at least one of the lower and upper substrates includes the guides configured to align the optical fibers in the predetermined optical alignment (figures 16-18).

17. Claims 56-58 and, 68-70 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al in view of Dudoff et al as applied to claims 43 and 60 respectively above, and further in view of case law.

Sakai in view of Shiota discloses the claimed invention except for the materials recited in claims 56-58 and, 68-70. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the adhesives recited in these claims, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. The motivation/suggestion for doing so would have been to permit the array to be used in a wide range of environments.

18. Claims 43, 47, 59-60, 64 and, 71 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al in view of Dudoff et al.

Shiota discloses a method for fabricating a fiber array (title) comprising, providing a substrate (figures 7 & 8) having a plurality of guides (724) each penetrating through the substrate. The substrate having one or more via holes (at 721) in fluid communication with the plurality of guides. Shiota discloses disposing a plurality of optical fibers (801) within the respective guides, each of the optical fibers being placed with a corresponding one of the guides (fig. 16). Finally, Shiota discloses injecting an adhesive (810) into the one or more via holes, the adhesive fixing the optical fibers in the respective guides of the substrate (fig. 18).

Shiota does not disclose that the adhesive comprises a solder or that the via hole is coated with a metal coating.

Dudoff discloses adhesive comprised of solder (paragraph 0110) and via holes coated with metal (paragraph 0186).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the array of Shiota by using an adhesive with solder and to coat the via holes with metal as taught by Dudoff. The motivation/suggestion for doing so would have been that using metal coating allows sub-micron tolerances (Dudoff paragraph 0035).

Regarding claims 47, 59, 64 and, 71 Shiota discloses that the via holes are disposed on two sides, front and rear, of the substrate (fig. 18).

Allowable Subject Matter

19. Claims 19 and 34 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: In combination with the claims, which it depends, all the equipment listed is coated with a metal coating.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohtsuka et al (6331081), Murakami et al, Ishikawa et al, Yui et al and, Kakii et al teach fiber arrays with via holes for adhesive.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Zarroli whose telephone number is 703-305-0608. The examiner can normally be reached on 7:30 to 3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Feild can be reached on (703) 308-2710. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read "Michael C. Zarroli". The signature is fluid and cursive, with the first name "Michael" being the most prominent part.

Michael C. Zarroli
Primary Examiner
Art Unit 2839

MCZ
MCZ